REMARKS

Claims 1-4 and 6-22 currently appear in this application. The Office Action of January 16, 2003, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicants respectfully request favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by WO 95/18886.

This rejection is respectfully traversed. Claim 1 has now been amended to recite that the amount… is from about 0.5-20 g of dry matter per square meter of web surface…

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Bair, either LeVan or Frankosky et al., Kennette et al., and optionally further in view of Kwok. The Examiner alleges that since it is known in the art to spray a latex-type resin material onto a pulp web to form a self-supporting fibrous web and, alternatively to homogeneously admix binder fibers with cellulose fibers and heat-activate the binder fibers, it would have been obvious to one skilled in the art motivated by the desire

to prevent or minimize fiber leakage to combine the two conventional techniques.

This rejection is respectfully traversed. The acknowledged prior art discloses nothing but two different methods of binding a dryformed fibrous web based on dryformed cellulosic web fibers. There is no motivation shown to combine these two methods, and one skilled in the art would not be so motivated. The APA does not disclose a process in which thermobinding fibers are used **inside** the product and the binder is used **only** at the surface of the web in **small** amounts in order to bind fiber dust and to counter fiber dusting from the surface of a paper web. Dusting from a surface occurs when cellulosic fibers are used which could have very short lengths, such as 0.5 mm or less.

In the admitted prior art, it should be noted at paragraph 0009 that normally, products bonded by spraying followed by compacting or embossing are relatively compact, lint free, and have a relatively high durability and reasonably good absorption. These products are mostly used to make napkins, wet tissues, table cloths, kitchen towels, and the like. At paragraphs 0012 and 0013, the specification states that airlaid products bonded with thermal bonding fibers have different properties from products made solely with

binding agent sprayed onto the web. For products with thermal bonding fibers, there is no delamination limit because the fibers are homogeneously distributed throughout the product. It is not necessary to compact the web very much, and the cellulose fibers are not coated with binders. Because of their good absorption properties, thermally bonded airlaid products made from cellulose derived from wood, often together with other additives, are mainly used as functional shields inside hygienic products such as sanitary napkins, incontinence products, etc.

The specification at paragraph 0014 notes however, the airlaid products made from cellulose fibers with activated bonding fibers have a tendency to release fibers when exposed to stretching and vibration during further handling. At paragraph 0015 is notes that one solution was to avoid dusting by using a higher percentage of binder fibers of different lengths. However, this solution is not realistic from a production standpoint.

It is clear from the specification that webs made with a binder sprayed onto the web are used for different products than webs made with binding fibers in the web. Moreover, at paragraph 0019, it should be noted that the present invention uses a combination of the two

prior art methods, **although with the binder in a modified form.**

Additionally, claim 1 has been amended to include the limitation of claim 5, namely, that the dryformed paper web has a central layer in which super absorbent material is incorporated. This feature is not shown in the admitted prior art no in any of the patents cited by the Examiner.

It is respectfully submitted that there is no reason to combine the admitted prior art, which was described as being inadequate to produce absorbent dryformed papers webs, with Bair. Bair discloses a water absorbent pad 10 which actually consists of three different webs or layers. The pad 10 according to Bair comprises two outer layers 13, 14 which are hydrophilic layers. A third web 16, consisting of a super absorbent polymer-containing web, is sandwiched between the two outer layers. This is not at all like an absorbent dryformed paper web which has a super absorbent central layer.

The Examiner refers to Bair at column 4, line 46 to column 5, line 25. Bair states that the outer fabric could be made from polyester homopolymer fibers and polyester copolymer binder fibers and/or a binder resin. It is also clear that the outer fabric is a non-

woven fabric forming each of the layers 12 and 14. However, it is clear from the description and the claims, in particular claim 1, line 7, that the lightly bonded non-woven web (the outer layer) is a **carded** web. One skilled in the art knows that a carded web would have no problem with dust, since the fiber lengths for non-woven webs made as carded webs would be made from fibers which are at least one inch long. Fibers so short as to be considered dust would not be used to make a carded web. Moreover, Bair does not teach the use of cellulosic fibers. There is no reason to combine the teachings of Bair with that of the admitted prior art, as the products produced are quite different, and there is no dusting with the Bair web. Additionally, one skilled in the art would not use the carding technology of Bair in order to manufacture a dry formed paper by laying a web of cellulosic fibers.

Although Bair does disclose that wood pulp or cellulose acetate may be used for the non-woven outer fabric (column 4, liens 60-64), it should be noted that the use of wood pulp in a layer manufactured by a carding process as specified in claim 1 of Bair is impossible. It should be noted that this use of wood pulp is in contradiction to conventional practice, as wood pulp, unlike long fibers, cannot be carded. At any rate, in

Bair the outer layer is not stated to be an absorbent web, but rather an outer web in which wicking and distribution of adequate liquids is possible from the outside through the outer fabrics 12 and 14 into the containing-containing web 16 which is arranged between the two outer fabrics.

Moreover, even assuming, *arguendo*, that it would be possible to manufacture the outer fabrics 12 and 14 from wood pulp in order to provide hydrophilic fiber material in the outer layer of Bair, that there is no disclosure that a binder used for the outer layer in combination with copolymer binder fibers should only be provided at the **surfaces** of the outer fabrics 12 and 14. According to the teaching of Bair, the binding fibers and/or resin should ensure an adequate bonding of the outer fabrics 12 and 14 to the containing-containing web 16, as indicated at column 4, lines 58-60. This passage makes it clear that the web concerned does not have a problem with fiber dusting from the surfaces of one of the outer fabrics 14 or 16. Instead, Bair provides a solution which makes it possible to obtain an adequate and secure bonding of the outer fabrics 12 and 14 to the core 16.

As the method according to the present invention is directed to manufacturing an absorbent

dryformed web which is manufactured with at least one center layer containing a super absorbent material, it is essential to the process that the binder only be applied at the surface of the web in order to preserve the superabsorbency of the super absorbent layer in the center layer of the web.

None of LeVan, Frankosky, Kwok, or Kennette adds to the APA and Bair to render the claimed process obvious, particularly since the claims now all require that the web include at least one center layer containing a super absorbent material. Kwok is particularly irrelevant to the herein claimed method because Kwok uses a carding process, which has nothing to do with laying a web of cellulosic fibers.

None of Bair, LeVan, Frankosky, Kwok, nor the admitted prior art, discloses or suggests that the aqueous binder solution should be applied in such a small amount that there is no deep penetration of the binder material into the material. In fact, it is essential that the aqueous binder **not** be transferred into the absorbent material in the central layer of the web, since such penetration could harm or deteriorate the absorbing ability of the center layer. Since the center layer of the web formed by the herein claimed process is super absorbent, binder material applied to this super

absorbent material would interfere with its absorbent characteristics.

As noted above, the APA does not suggest combining the use of thermobonded fibers with a sprayed on binder in making a fibrous web as claimed herein, because the method of the present invention is directed to making an airlaid absorbent web which has at least one center layer of super absorbent material. This center layer requires that the binder be sprayed on so that it does not penetrate far into the web so that the superabsorbency of the center layer is not compromised.

LeVan adds nothing to the APA and/or Bair, as LeVan forms a batt having a sealed outer surface for minimal fiber leakage. LeVan discloses bonded polyester fiberfill batts comprising a blend of binder fiber with binder-compatible fiberfill to form a sealed outer surface. This is not at all like an airlaid web as claimed herein, and one skilled in the art would not look to methods for making airlaid webs in processes for making fiberfill batts, which have much different properties, being used for fillers for pillows, cushions, and the like.

Likewise, one skilled in the art would not look to Frankosky for a method for making an airlaid web, as Frankosky et al. also make polyester fiberfill batts.

Kennette et al. disclose a nonwoven fabric which is useful as a wiping cloth. The Kennette et al. fabric is a substantially isotropic web of lightly entangled rayon staple fibers containing a small amount of adhesive binder **substantially uniformly distributed throughout the web**. This teaches away from the present invention, in which the binder should be limited to the outer surfaces of the web so as not to interfere with the superabsorbency of the center layer.

Kwok is also irrelevant to the herein claimed process, as Kwok is concerned with making lofty battings of polyester fiberfill. Kwok uses a blend of mechanically-crimped fibers and of bicomponent fibers of helical configuration to produce a loftier bonded batt that has previously been made.

It is respectfully submitted that the Examiner has not shown any motivation to APA with any of the patens cited. One skilled in the art would not look to methods for forming carded webs, or for making fiberfill batts, to improve processes for making absorbent dryformed paper web with at least one center layer containing a super absorbent material.

In view of the above, it is respectfully submitted that the claims are now in condition for

allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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